



# New START Treaty and Security Summit Key to President's Agenda

April saw a flurry of nuclear security-related activity in Washington, D.C., and around the world.

A little more than one year after delivering his landmark Prague speech on nonproliferation and the importance of global nuclear security, President Obama returned to the capital of the Czech Republic to sign a new strategic arms control treaty with Russia, the first of its kind in two decades.

Pending ratification by the U.S. Senate, the New START Treaty will require the United States and Russia to reduce – by 30 percent below levels stipulated in the 2002 Moscow agreement – the number of nuclear warheads they have deployed on

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## NUCLEAR POSTURE REVIEW:

Thomas D'Agostino, under secretary for Nuclear Security & Administrator National Nuclear Security Administration, speaks about the Nuclear Posture Review during a press conference.

# Nuclear Posture Review Highlights NNSA Mission

Ahead of the President's Nuclear Security Summit this month, the Obama Administration unveiled the 2010 Nuclear Posture Review (NPR). This government-wide review establishes U.S. nuclear policy, strategy, capabilities and force posture for the next five to ten years.

The President's Nuclear Posture Review outlines five key objectives: preventing nuclear proliferation and nuclear terrorism; reducing the role of nuclear weapons; maintaining strategic deterrence and stability at reduced nuclear force levels; strengthening regional deterrence and reassurance of U.S. partners; and, sustaining a safe, secure, and effective nuclear arsenal.

As the country's nuclear security enterprise, NNSA plays a lead role in implementing many of these national security objectives. The NPR recognizes the importance of maintaining a safe, secure and effective U.S. nuclear deterrent while reducing the role of nuclear weapons. To this end, the review advocates for a strong reinvestment in NNSA infrastructure and revitalization of the workforce, as previously outlined in the President's 2011 Budget Request.

This NPR is part of the comprehensive, government-wide effort to

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# Administrator's Corner

The month of April 2010 has been one of the busiest, most important, and most exciting periods in the 10-year history of the NNSA. After many months of hard work by the Administration's national security team, the Nuclear Posture Review (NPR) was released. The NPR elevates the work done across the Nuclear Security Enterprise to the top of our Nation's security strategy. The new START Treaty was signed, which will guide stockpile levels for decades to come, and an historic Nuclear Security Summit was held with nearly 50 Nations that delivered a global consensus on the need to secure all vulnerable nuclear material around the world within four years.

While we have worked many long nights and weekends on the NPR



and the Nuclear Security Summit, the work being done right now by each of you will have a significant impact on the future success of the NNSA for years to come. For example, the NPR reaffirmed the President's commitment to providing the NNSA the resources needed to maintain the safety, security, and effectiveness of the U.S. nuclear deterrent without underground testing. In addition, the NPR also stressed the importance of providing support for all of the other key elements of his nuclear

security agenda. The issuance of the NPR, combined with the outcome of the recent Nuclear Security Summit, and the President's FY 2011 Budget Request, highlights the critical role NNSA plays in combating nuclear dangers at home and abroad.

As I write this message to you, we are finalizing the arrangements for NNSA's 10-Year Anniversary Celebration. I encourage you to participate in the events planned for this celebration. I am honored to serve as the Administrator during these historic times, and to have the privilege of working with each of you as we strive to accomplish the ambitious goals set forth by the President.

**Tom D'Agostino,  
Administrator**

## New START Treaty and Security Summit Key to President's Agenda *(continued from page 1)*

intercontinental ballistic missiles, submarine-based ballistic missiles and bombers.

At the signing ceremony, President Obama stressed not only the significance of the treaty for U.S.-Russian relations, but for the greater issue of global nuclear security.

"Nuclear weapons are not simply an issue for the United States and Russia – they threaten the common security of all nations," Obama said. "A nuclear weapon in the hands of a terrorist is a danger to people everywhere – from Moscow to New York; from the cities of Europe to South Asia."

With that sentiment in mind, the President convened a gathering of leaders from 47 nations the following week in Washington, D.C.

Secretary of Energy Steven Chu, Deputy Secretary Daniel Poneman and NNSA Administrator Thomas D'Agostino joined the President at the two-day Nuclear

Security Summit. The historic gathering of world leaders featured several announcements related to NNSA programs, including the removal of all remaining highly enriched uranium (HEU) from Chile despite an 8.8 magnitude earthquake there in late February.

Other highlights included the closing of Russia's last weapon-grade plutonium production reactor; the signing of a Megaports agreement with Argentina; a cooperative nuclear safeguards agreement with Japan; and agreements by Canada, Mexico and Ukraine to return HEU to its country of origin.

In his closing remarks, Obama stated that "our work today not only advances the security of the United States, it advances the security of all mankind, and preventing nuclear proliferation and nuclear terrorism will remain one of my highest priorities as President."

## Nuclear Posture Review Highlights NNSA Mission *(continued from page 1)*

implement the vision President Obama outlined in his Prague speech last year. Combined with this month's Nuclear Security Summit and the FY2011 budget request

(which increased 13.4 percent from last year to more than \$11 billion for the NNSA), the NPR emphasizes the important role NNSA and each of its employees plays in

implementing President Obama's historic nuclear security agenda.

# NNSA Announces Special Tools and Processes for B53 Dismantlement Program

Pantex Plant has developed a new process and special tooling designed to ensure a safe dismantlement process with a side benefit of being an efficient process for the B53 weapons system.

After it was introduced into the stockpile in 1962, the B53 served a key role in the United States' nuclear deterrent until its retirement in 1997. The bomb, built at the now-closed Burlington, Iowa, assembly plant, is one of the longest lived and highest yield nuclear weapons ever fielded. Its sheer size and weight – about the size of a mini-van and approximately 10,000 pounds – provided many challenges for the project team responsible for developing a dismantlement program that meets the requirements of NNSA's Seamless Safety for the 21st century (SS-21) process.

"The tooling and processes developed for the B53 dismantlement program are part of NNSA's commitment to employing the best science and technology in the world to solve complex national security challenges," said Brig. Gen. Garrett Harencak, NNSA principal assistant deputy administrator for Military Application. "Whether we're securing vulnerable nuclear material around the world, ensuring the safety and reliability of our stockpile or safely dismantling weapons that are no longer needed, our dedicated engineers, researchers and technicians work every day to improve the efficiency and effectiveness of our mission."

NNSA's SS-21 process fully integrates the weapon system with the facility, tooling, operating procedures and personnel involved in the dismantlement

included representatives from B&W Pantex, Sandia and Los Alamos national laboratories.

"We collaborated closely with the design agencies," said Steve Young,



**NEW AND IMPROVED:** A new tooling process has been designed to ensure an efficient and safe dismantlement process of the B53.

program to form a safe, efficient and effective operating environment. The benchmark for developing weapons assembly and disassembly processes at the plant, the SS-21 process, has been incorporated into all current Pantex weapon programs. Once fully operational, the new B53 tooling and processes will allow Pantex to safely and responsibly dismantle this legacy weapon.

The project team responsible for developing this SS-21 process

Engineering Division manager at B&W Pantex.

With the design and fabrication of tooling and procedures complete, the project team is expected to receive authorization to begin disassembling the B53 after NNSA completes an extensive safety review that includes approval of a Documented Safety Analysis and completion of a Nuclear Explosive Safety Study.

# NNSA Team Removes Last HEU Record Earthquake

Earlier this month, the National Nuclear Security Administration announced the removal of the final highly enriched uranium (HEU) from Chile, making it the fifth country to remove all of its HEU since President Obama called for an international effort to secure all vulnerable nuclear material around the world within four years.

The operation in Chile was successfully completed despite a massive earthquake on Feb. 27 and numerous aftershocks that occurred while the NNSA team was in the country.

"The removal of all HEU from Chile is a major accomplishment for NNSA, the Government of Chile and the international community," said NNSA Administrator Thomas D'Agostino. "The fact that the Chilean government devoted so many resources to completing this mission, even during a national emergency, is a demonstration of their commitment to this vital nuclear security agenda.

NNSA's Global Threat Reduction Initiative and the Chilean Commission of Nuclear



**FINAL CHILE HEU REMOVED:** Highly enriched uranium is loaded onto trucks at the Lo Aguirre nuclear facility near Santiago in preparation for final transport to the port and shipment to the United States.

Energy removed 13.6 kilograms of HEU spent fuel from the La Reina

Nuclear Center in downtown Santiago, Chile, along with 4.3 kilograms of slightly irradiated HEU and 0.3 kilograms of fresh fuel from the Lo Aguirre Nuclear Center located 40 km west of Santiago, and more than 400 U.S.-origin radiological sources.

The operation was the first shipment of HEU spent fuel to the United States under a Record of Decision signed by NNSA Administrator D'Agostino in January 2009 that allows the United States to accept limited amounts of non-U.S.-origin HEU spent nuclear fuel to provide additional flexibility to address nuclear material around the world. This shipment from Chile, which included non-U.S.-origin HEU from the RECH-1 and RECH-2 research reactors, was the first to be conducted under the new decision.

With the completion of this shipment, GTRI has removed all significant amounts



**LA REINA NUCLEAR CENTER:** The spent fuel pond at the Lo Aguirre nuclear facility.

# From Chile Despite

**SAFE TRANSPORT:** After the 8.8 magnitude earthquake, NNSA and Chilean officials inspected the final transportation route for damage and ultimately decided to use a different route and port to facilitate removal of the material from the country.

of HEU from 18 countries. This results in permanent threat reduction because it eliminates weapons usable nuclear material at civilian sites.

With the successful completion of this shipment, GTRI has now removed or assisted with the disposition of more than 2,600 kilograms of HEU and plutonium – enough material to make more than 100 nuclear weapons.



## Boots on the Ground, Movement Underfoot

It looked so easy on paper: one week to remove and pack the last remaining highly enriched uranium (HEU) in Chile, one week to prep the material for transportation and load it onto vessels bound for the United States.

Then came the sudden shudder, a creaking of earthly bones that brought forth the fifth-largest earthquake in recorded history. The 8.8 magnitude disaster rocked Chile's coastline, killing hundreds, ripping apart roads and flattening homes.

Dozens of miles inland, the team of Americans woke to find their hotel rooms swaying uneasily as Santiago's power grid flicked on and off. Lamps tumbled from

bedside tables. Mirrors shattered. Varicose cracks emerged in the walls.

It was a little after 3:34 a.m. NNSA officials assembled in the parking lot, BlackBerries lit up with calming e-mails to loved ones back home and queries for the latest information.

Through it all, safely packed in cargo containers at two nearby civilian reactor sites, the HEU slumbered through the night.

The next day, the Americans and Chileans began leaping what would become three days of hurdles related to the quake: changing the route for the secret overnight convoy; finding a port that had sustained less damage

than the original location; ensuring that the shipping vessels could take on fuel and food; arranging security at a time when police were being dispatched to harder-hit parts of the country.

In the end, an exhausted team, including embedded reporters from three major media outlets, stood baking in the late summer sun as the HEU sailed into open waters. It is done, pulsed the silent sentiment. A small aftershock rippled underfoot.

The operation wound up being much harder than it looked on paper, but outstanding leadership and cooperation between the two nations enabled the success of a mission that otherwise might have been impossible.

## *The Science of Nuclear Security*

# MTI Satellite Celebrates 10 Years in Orbit, Continues to Serve

On March 12, hundreds of miles above the Earth, the Multispectral Thermal Imager (MTI) satellite reached its 10th anniversary in service as it completed its 55,000th orbit – far exceeding both its intended maximum life and its potential applications.

"The MTI satellite project is a terrific example of how NNSA and the Department of Energy leverage the best science and engineering in the world to advance nonproliferation efforts and promote national security," NNSA Administrator Thomas D'Agostino said. "The multilaboratory team has consistently demonstrated the critical role our national laboratories play in tackling the most challenging problems facing our nation and the world."

NNSA sponsored the MTI satellite project as a tri-lab effort to develop and evaluate advanced space-based technology for nonproliferation treaty monitoring and other national security and civilian applications. The project was carried out by DOE's Savannah River National Laboratory and NNSA's Los Alamos and Sandia national laboratories. Sandia served as the lead lab, responsible for the system engineering, integration, testing, launch support and on-orbit operations.

Originally intended for a one- to three-year mission, the satellite was designed to provide highly accurate radiometry with good spatial resolution in 15 spectral bands and measure ground temperatures from space with accuracies in the realm of one Kelvin. Analysts armed with advanced computer simulation codes and expertise can then employ these precision radiometric and thermal imaging capabilities to research phenomenology associated with nuclear proliferation.

After reaching the NNSA/DOE program's three-year goal, the satellite was still functional and providing important data. NNSA made the MTI system available to other users for government-sponsored research in the national interest after the satellite had completed its initial goals.

In addition to numerous defense-related applications, the members of the MTI users group have employed the satellite's imagery for research in volcanology, glaciology, entomology, climatology, and the study of the moon.



**TEN YEARS IN ORBIT:** Brian Post stands under an antenna at the ground station at Sandia National Laboratories during the MTI satellite's 55,000th orbit.

# Kansas City Plant Mentors Next Generation On Environmental Stewardship

## **T.R.U.E. Blue Project teaches importance of water quality**

The NNSA's Kansas City Plant (KCP) recently provided ecosystem education to local high school students. The program called the T.R.U.E. Blue Project (Teaching Rivers in Urban Environments), is a proactive, hands-on watershed literacy and a water quality monitoring curriculum for students in grades 5-12.

"This project is part of an ongoing effort to be proactive and conscientious in our environmental actions," said KCP Health, Safety, and Environment Manager Don Fitzpatrick. "Because we all want a clean and healthy place to work and live, we at KCP have committed to being good neighbors to our community and good stewards of our environment."

T.R.U.E. Blue begins in the classroom where students learn about the geography of the local Blue River Watershed and how storm water runoff from impervious surfaces can not only

lead to flooding but can also contribute to pollution in Kansas City creeks and streams.

In the second lesson, students went to the river to collect samples, record the data and learn how to conduct a site survey. Many of the tests were analyzed immediately. Students found a class average for each test and standardizing charts were used to calculate a Water Quality Index number. Using the collected data, classes are encouraged to plan and implement water quality improvement projects. Twenty local KCP employees assisted the students to the river for the lesson.

KCP employees volunteered approximately 14,000 hours to community and education outreach efforts in 2009, including the annual Blue River Rescue. As an Environmental Management System certified site, KCP assures the quality of its established



**PROACTIVE MENTORING:** Kansas City Plant employees teach students about the local ecosystem and the importance of healthy water systems.

programs, such as pollution prevention, waste reduction, community involvement and recycling. Its programs and results continue to be recognized and honored by awards from third-party organizations.



**FUTURE SCIENTISTS:** Across the NNSA enterprise, national laboratories and production facilities hosted science and engineering fairs for students. Lawrence Livermore National Laboratory physicist and science fair judge Wolfgang Stoeffl talks with student Kevin Johnston about his project during the 2008 Tri-Valley Science and Engineering Fair.

# NNSA Re-engineering and Management Transformation Underway

Answering President Obama's call on all federal entities to streamline the way they do business, NNSA Administrator Thomas D'Agostino is building on contract, business, and human capital initiatives to deliver on the President's challenge. Under his leadership and direction, NNSA established the Enterprise Re-engineering and Management Transformation Initiative to make meaningful changes to the way the agency operates as it moves from a Cold War nuclear weapons complex into a 21st century nuclear security enterprise.

The purpose of the NNSA governance transformation initiative is to develop an approach to administration that supports a safer, more secure, and more efficient

enterprise; an enterprise that leverages the scientific and technical capabilities of the workforce to maximize mission accomplishment. These objectives will be achieved through a common understanding of how NNSA governs and performs within its core operating principles:

- The mission is vital and urgent
- Science and technology lie at the heart of our mission
- Success is achieved through teamwork, innovation and continuous improvement
- We pursue our mission in a manner that is safe, secure, legally and ethically sound, and fiscally and environmentally responsible
- We manage risk across program objectives and operational performance to fulfill our

mission

- We apply validated standards and rely on rigorous peer reviews

The NNSA workforce – under Administrator D'Agostino's leadership – is uniquely positioned to apply these government transformation principles and set the course for the future of the NNSA as it transitions from a Cold War era nuclear weapons complex to a 21st century nuclear security enterprise.

More information on the NNSA's Enterprise Re-engineering and Management Transformation Initiative can be found on the NNSA intranet.

## SAFETY PROFESSIONALS OF THE YEAR:

Administrator Thomas D'Agostino (right) thanks the NNSA Safety Professionals of the Year. From left to right, William A. Gentile, NNSA Los Alamos Site Office and Paul H. Jones, Y-12 Site Office were named co-winners of the 2009 NNSA Federal Safety Professional of the Year. Gentile is an emergency program manager at LASO. Jones is a functional area representative for radiation protection and industrial hygiene at YSO. Wayburn "Scott" Wilson, manager of radiation safety for B&W Pantex, was named as a recipient of the 2009 NNSA Management & Operating Contractor Safety Professional of the Year.



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### EDITORS

*William Gibbons  
Andrew Hallock  
Damien La Vera  
Tracy Loughead  
Michael Padilla  
Casey Ruberg  
Al Stotts  
Jennifer Wagner*

### EDITING AND DESIGN

*Barbara L. Courtney*

### CONTRIBUTORS

*Darrick Hurst,  
Sandia Labs  
Randy Montoya,  
Sandia Labs  
Tanya Snyder,  
Honeywell FM&T*